CLAIMS

We claim:

1. A method of treating or preventing diseases of the eye, comprising, administering intraocularly a gene delivery vector which directs the expression of a neurotrophic factor, such that said disease of the eye is treated or prevented.

2. The method according to claim 1 wherein said neurotrophic factor is NGF, BDNF, CNTF, NT-3, or, NT-4.

3. The method according to claim 1 wherein said neurotrophic factor is a FGF.

4. The method according to claim 3 wherein said FGF is FGF-2, FGF-5, FGF-18, FGF-20, or, FGF-21.

5. The method according to claim 1 wherein said disease of the eye is macular degeneration.

6. The method according to claim 1 wherein said disease of the eye is diabetic retinopathy.

7. The method according to claim 1 wherein said disease of the eye is an inherited retinal degeneration.

8. The method according to claim 7 wherein said inherited retinal degeneration is retinitis pigmentosa.

9. The method according to claim 1 wherein said disease of the eye is glaucoma.

10. The method according to claim 1 wherein said disease of the eye is a surgery-induced retinopathy.

11. The method according to claim 1 wherein said disease of the eye is retinal detachment.

12. The method according to claim 1 wherein said disease of the eye is a photic retinopathy.

13. The method according to claim 1 wherein said disease of the eye is a toxic retinopathy.

14. The method according to claim 1 wherein said disease of the eye is a trauma-induced retinopathy.

15. The method according to claim 1 wherein said gene delivery vector is a retrovirus selected from the group consisting of HIV and FIV.

16. The method according to claim 1 wherein said gene delivery vector is a recombinant adeno-associated viral vector.

17. A method of inhibiting neovascular disease of the eye, comprising, administering intraocularly a gene delivery vector which directs the expression of an anti-angiogenic factor, such that said neovascular disease of the eye is inhibited.

18. The method according to claim 17 wherein said anti-angiogenic factor is soluble Flt-1, PEDF, soluble Tie-2 receptor, or, a single chain anti-VEGF antibody.

19. The method according to claim 17 wherein said neovascular disease of the eye is diabetic retinopathy, wet AMD, and retinopathy of prematurity.

20. The method according to claim 17 wherein said gene delivery vector is a retrovirus selected from the group consisting of HIV and FIV.

21. The method according to claim 17 wherein said gene delivery vector is a recombinant adeno-associated viral vector.

22. A gene delivery vector which directs the expression of a neurotrophic factor, or an anti-angiogenic factor.

23. The gene delivery vector according to claim 22 wherein said neurotrophic factor is NGF, BDNF, CNTF, NT-3, or, NT-4.

24. The gene delivery vector according to claim 22 wherein said neurotrophic factor is a FGF.

25. The gene delivery vector according to claim 22 wherein said FGF is FGF-2, FGF-5, FGF-18, FGF-20, or, FGF-21.

26. The gene delivery vector according to claim 22 wherein said anti-angiogenic factor is soluble Flt-1, PEDF, soluble Tie-2 receptor, or, a single chain anti-VEGF antibody.

27. The gene delivery vector according to claim 22 wherein said vector is generated from a retrovirus.

28. The gene delivery vector according to claim 27 wherein said retrovirus is HIV or FIV.

29. The gene delivery vector according to claim 22 wherein said vector is generated from a recombinant adeno-associated virus.

30. A non-human animal model of neovascularization of the eye, comprising an animal having an angiogenic transgene in the eye.

31. The non-human animal model according to claim 30 wherein said neovascularization is retinal neovascularization.

32. The non-human animal model according to claim 30 wherein said neovascularization is choroidal neovascularization.

33. The non-human animal model according to claim 30 wherein said animal is a mouse or rat.

34. The non-human animal model according to claim 30 wherein said angiogenic transgene encodes VEGF.

35. The non-human animal model according to claim 30 wherein said angiogenic transgene encodes an angiopoietin.

36. A method for making a non-human animal model of neovascularization of the eye, comprising administering to a non-human animal a gene delivery vector which directs the expression of an angiogenic transgene.

37. The method according to claim 36 wherein said gene delivery vector is administered subretinally.

38. The method according to claim 36 wherein said gene delivery vector is administered intravitreally.

39. The method according to claim 36 wherein said gene delivery vector is rAV or rAAV.

40. The method according to claim 36 wherein said angiogenic transgene is a nucleic acid molecule which encodes VEGF.

41. The method according to claim 36 wherein said angiogenic transgene is a nucleic acid molecule which encodes an angiopoietin.

42. A method for determining the ability of an anti-angiogenic factor to inhibit neovascularization of the eye, comprising: (a) administering to an animal model according to any one of claims 30 to 35 an anti-angiogenic factor, and (b) determining the ability of said anti-angiogenic factor to inhibit neovascularization of the eye.

43. The method according to claim 42 wherein said anti-angiogenic factor is administered subretinally.

44. The method according to claim 42 wherein said anti-angiogenic factor is administered intravitreally.